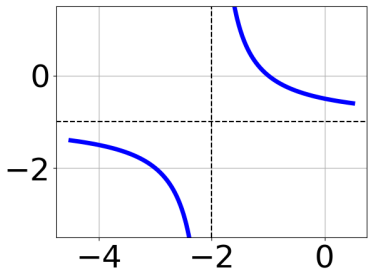
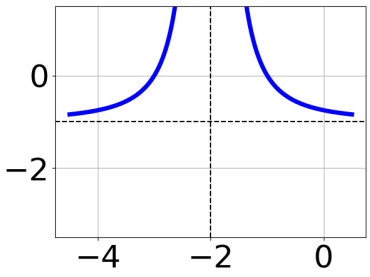
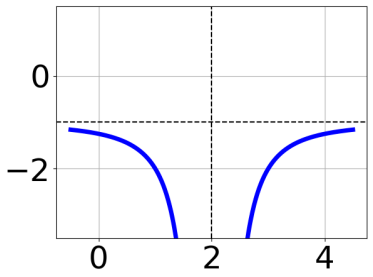
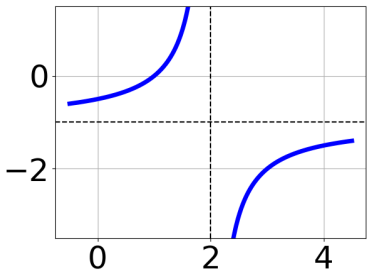
1. Choose the graph of the equation below.

$$f(x) = \frac{-1}{x-2} - 1$$

A. 

C. 

B. 

D. 

E. None of the above.

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2. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{7}{3x-8} + 8 = \frac{2}{9x-24}$$

A. All solutions lead to invalid or complex values in the equation.

B. $x \in [1.4, 4.4]$

C. $x_1 \in [-3.93, 0.07]$ and $x_2 \in [2.4, 2.41]$

D. $x_1 \in [-0.6, 5.4]$ and $x_2 \in [2.41, 2.54]$

E. $x \in [-3.93, 0.07]$

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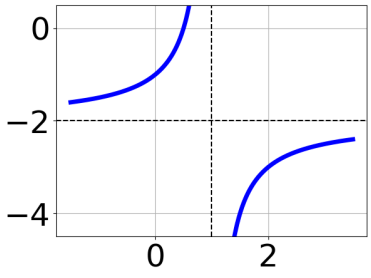
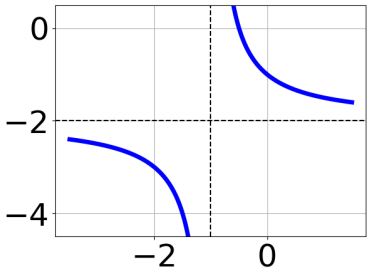
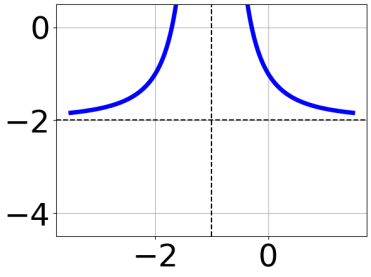
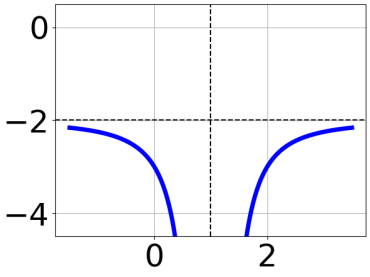
3. Choose the graph of the equation below.

$$f(x) = \frac{-1}{(x-1)^2} + 2$$

A. 

C. 

B. 

D. 

E. None of the above.

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4. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{-8}{6x-3} + -5 = \frac{-7}{-36x+18}$$

A. $x \in [-1.2, -0.4]$

B. $x_1 \in [-0.7, 1.1]$ and $x_2 \in [0.3, 0.7]$

C. $x \in [0.19, 4.19]$

D. All solutions lead to invalid or complex values in the equation.

E. $x_1 \in [-1.2, -0.4]$ and $x_2 \in [-0.7, 0.3]$

---

5. Determine the domain of the function below.

$$f(x) = \frac{5}{24x^2 + 6x - 9}$$

A. All Real numbers.

B. All Real numbers except $x = a$ and $x = b$, where $a \in [-13, -10]$ and $b \in [17, 21]$

C. All Real numbers except $x = a$, where $a \in [-0.75, 0.25]$

D. All Real numbers except $x = a$ and $x = b$, where $a \in [-0.75, 0.25]$ and $b \in [0.5, 3.5]$

E. All Real numbers except $x = a$, where $a \in [-13, -10]$

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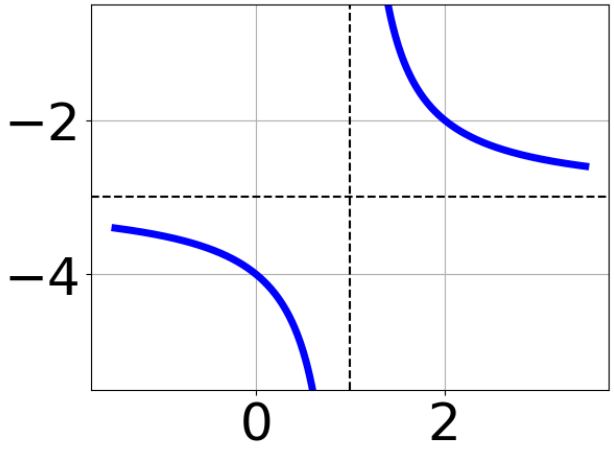
6. Choose the equation of the function graphed below.



A. $f(x) = \dfrac{1}{x-1} - 4$

B. $f(x) = \dfrac{1}{(x-1)^2} - 4$

C. $f(x) = \dfrac{-1}{x+1} - 4$

D. $f(x) = \dfrac{-1}{(x+1)^2} - 4$

E. None of the above

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7. Determine the domain of the function below.

$$f(x) = \frac{3}{20x^2 + x - 30}$$

A. All Real numbers except $x = a$ and $x = b$, where $a \in [-21, -18]$ and $b \in [28, 34]$

B. All Real numbers except $x = a$, where $a \in [-2.25, 0.75]$

C. All Real numbers except $x = a$, where $a \in [-21, -18]$

D. All Real numbers except $x = a$ and $x = b$, where $a \in [-2.25, 0.75]$ and $b \in [-0.8, 3.2]$

E. All Real numbers.

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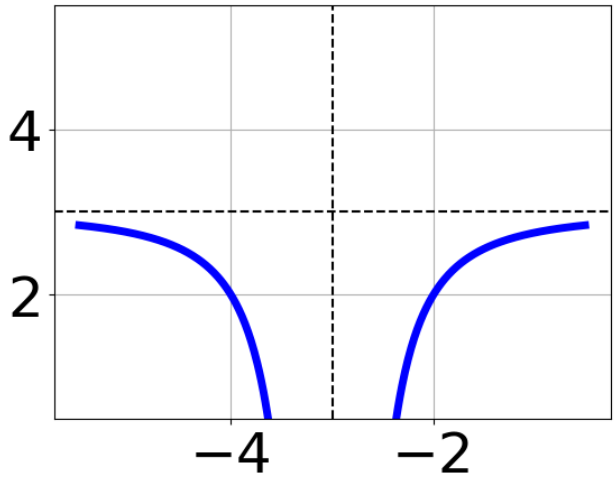
8. Choose the equation of the function graphed below.



A. $f(x) = \dfrac{1}{x-3} + 3$

B. $f(x) = \dfrac{-1}{(x+3)^2} + 3$

C. $f(x) = \dfrac{1}{(x-3)^2} + 3$

D. $f(x) = \dfrac{-1}{x+3} + 3$

E. None of the above

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9. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{3x}{-5x+5} + \frac{-2x^2}{-35x^2+10x+25} = \frac{-2}{7x+5}$$

A. $x_1 \in [-0.76, -0.74]$ and $x_2 \in [-0.29, 1.06]$

B. $x \in [-0.74, -0.67]$

C. $x \in [0.96, 1]$

D. All solutions lead to invalid or complex values in the equation.

E. $x_1 \in [0.96, 1]$ and $x_2 \in [-1.5, -0.63]$

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10. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{6x}{-6x-2} + \frac{-5x^2}{-18x^2+6x+4} = \frac{4}{3x-2}$$

A. $x \in [-0.69, -0.24]$

B. $x_1 \in [-1.03, -0.38]$ and $x_2 \in [0.01, 0.36]$

C. $x_1 \in [-0.69, -0.24]$ and $x_2 \in [0.59, 0.96]$

D. $x \in [0.6, 1.75]$

E. All solutions lead to invalid or complex values in the equation.
